Amendments to the Claims:

This listing of Claims will replace all prior versions, and listings, of claims in the application where added material is shown in underlined type, deleted material is shown in ~~strikeout type~~ or within double brackets:

Listing of Claims:

1. (Currently amended) A system for adaptive configuration, the system comprising:

~~a memory adapted to store a first set of configuration information, the~~ a first set of configuration information comprising a first subset of configuration information and a second subset of configuration information;

a first plurality of fixed and differing computational elements;

a second plurality of fixed and differing computational elements;

an interconnection network coupled to the first and second pluralities of computational elements, comprising:

a first level of the interconnection network comprising a plurality of routing elements adapted to provide a selected operating mode of a plurality of operating modes by selectively routing data and the first and second subsets of configuration information to the corresponding first or second pluralities of computational elements, and

a second level of the interconnection network comprising a plurality of switching elements adapted to configure the first plurality of computational elements for a first functional mode of a plurality of functional modes in response to the first subset of configuration information, and to configure the second plurality of computational elements for a second, different functional mode of the plurality of functional modes, in response to the second subset of configuration information.

2. (Previously presented) The system of claim 1, wherein the first set of configuration information provides a first system operating mode of the plurality of operating modes.

3. (Currently amended) The system of claim ~~2~~ 144, wherein the memory is further adapted to store a second set of configuration information, the second set of configuration information providing a second system operating mode of the plurality of operating modes.

4. (Previously presented) The system of claim 3, wherein the first set of configuration information corresponds to a first system configuration capacity and the second set of configuration information corresponds to a second system configuration capacity.

5. (Previously presented) The system of claim 1, wherein the first set of configuration information is selected from a plurality of sets of configuration information.

6. (Cancelled)

7. (Currently amended) The system of claim ~~1~~ 144, wherein the memory comprises a second plurality of computational elements configured for a memory functional mode.

8. (Currently amended) The system of claim ~~1~~ 144, wherein the memory comprises a configuration of the plurality of computational elements in response to the first set of configuration information.

9. (Previously presented) The system of claim 1, wherein the first set of configuration information is transferred to the system from a machine-readable medium.

10. (Previously presented) The system of claim 1, wherein the first set of configuration information is transmitted to the system through a wireless interface.

11. (Previously presented) The system of claim 1, wherein the first set of configuration information is transmitted to the system through a wireline interface.

12. (Original) The system of claim 1, wherein the first set of configuration information is embodied as a plurality of discrete information data packets.

13. (Original) The system of claim 1, wherein the first set of configuration information is embodied as a stream of information data bits.

14. (Currently amended) The system of claim 1, wherein the first and second pluralities of fixed and differing computational elements comprise a plurality of fixed circuit architectures~~, the plurality of fixed circuit architectures comprising fixed architectures~~ adapted to perform at least two of the following corresponding functions: memory, addition, multiplication, complex multiplication, subtraction, configuration, reconfiguration, control, input, output, and field programmability.

15. (Previously presented) The system of claim 1, wherein the plurality of functional modes comprises at least two of the following functional modes: linear algorithmic operations, non-linear algorithmic operations, finite state machine operations, controller operations, memory operations, and bit-level manipulations.

16. (Original) The system of claim 1, wherein the first subset of configuration information and the second subset of configuration information are commingled with data to form a singular bit stream.

17. (Previously presented) The system of claim 1, further comprising:

a controller coupled to the first and second pluralities of computational elements and to the interconnection network, the controller adapted to direct and schedule the configuration of the first plurality of computational elements for the first functional mode and the configuration of the second plurality of computational elements for the second functional mode.

18. (Previously presented) The system of claim 17, wherein the controller is further adapted to time and schedule the configuration of the first and second pluralities of computational elements with corresponding data.

19. (Previously presented) The system of claim 17, wherein the controller is further adapted to select the first subset of configuration information and the second subset of configuration information from a singular bit stream containing data commingled with the first set of configuration information.

20. (Currently amended) The system of claim 1, wherein when the second plurality of computational elements ~~are~~ is configured for a controller functional mode of the plurality of functional modes, the second plurality of computational elements is adapted to direct and schedule the configuration of the first plurality of computational elements for the first functional mode.

21. (Previously presented) The system of claim 20, wherein the second plurality of computational elements is further adapted to time and schedule the configuration of the first plurality of computational elements with corresponding data.

22. (Previously presented) The system of claim 20, wherein the second plurality of computational elements is further adapted to select the first subset of configuration information and the second subset of configuration information from a singular bit stream containing data commingled with the first set of configuration information.

23. (Previously presented) The system of claim 1, wherein the system is embodied within a mobile station having the plurality of operating modes.

24. (Previously presented) The system of claim 23, wherein the plurality of operating modes of the mobile station comprises at least two of the following modes: a mobile telecommunication mode, a personal digital assistance mode, a multimedia reception mode, a mobile packet-based communication mode, and a paging mode.

25. (Previously presented) The system of claim 1, wherein the system is embodied within a server having the plurality of operating modes.

26. (Previously presented) The system of claim 1, wherein the system is embodied within an adjunct network entity having the plurality of operating modes.

27. (Previously presented) The system of claim 1, wherein the first plurality of computational elements are configured to generate a request for a second set of configuration information for a second system operating mode of the plurality of operating modes.

28. (Previously presented) The system of claim 27, wherein the first plurality of computational elements are further configured to determine a system configuration capacity prior to utilizing the second set of configuration information to configure for the second system operating mode.

29. (Previously presented) The system of claim 28, wherein the system configuration capacity is determined in a plurality of predefined units of hardware.

30. (Previously presented) The system of claim 1, wherein the system is embodied within an integrated circuit.

31. (Previously presented) The system of claim 1, wherein the first plurality of computational elements are operating in the first functional mode while the second plurality of computational elements are being configured for the second functional mode.

32. (Currently amended) A method for adaptive configuration of an integrated circuit, the integrated circuit having first and second pluralities of heterogeneous computational elements and an interconnection network, a first level of the interconnection network having routing elements and a second level of the interconnection network having switching elements, the method comprising:

receiving a first set of configuration information, the first set of configuration information comprising a first subset of configuration information and a second subset of configuration information;

using the routing elements, selectively routing data and the first subset of configuration information through the first level of the interconnection network to the first plurality of computational elements and selectively routing data and the second subset of configuration

information through the first level of the interconnection network to the second plurality of computational elements to provide a selected operating mode of a plurality of operating modes;

in response to the first subset of configuration information, using the switching elements, configuring through the second level of the interconnection network the first plurality of computational elements for a first functional mode of a plurality of functional modes, the first plurality of computational elements having fixed and differing architectures;

in response to the second subset of configuration information, using the switching elements, configuring through the second level of the interconnection network the second plurality of computational elements of the integrated circuit for a second, different functional mode of the plurality of functional modes.

33. (Previously presented) The method of claim 32, wherein the first set of configuration information provides a first operating mode of the plurality of operating modes.

34. (Previously presented) The method of claim 32, further comprising:

receiving a second set of configuration information, the second set of configuration information providing a second operating mode of the plurality of operating modes.

35. (Previously presented) The method of claim 34, wherein the first set of configuration information corresponds to a first configuration capacity and the second set of configuration information corresponds to a second configuration capacity.

36. (Original) The method of claim 32, further comprising:

selecting the first set of configuration information from a plurality of sets of configuration information.

37. (Original) The method of claim 32, further comprising:

storing the first set of configuration information in a memory.

38. (Currently amended) The method of claim 32, further comprising:

the integrated circuit having a third plurality of heterogeneous computational elements, and

storing the first set of configuration information in [[a]] ~~second~~ the third plurality of heterogeneous computational elements configured for a memory functional mode.

39. (Currently amended) The method of claim 32, further comprising:

the integrated circuit having a third plurality of computational elements, and

storing the first set of configuration information as a configuration of the third plurality of heterogeneous computational elements.

40. (Original) The method of claim 32, further comprising:

storing the first set of configuration information in a machine-readable medium.

41. (Previously presented) The method of claim 32, wherein the first set of configuration information is received through a wireless interface.

42. (Original) The method of claim 32, wherein the first set of configuration information is received through a wireline interface.

43. (Original) The method of claim 32, wherein the first set of configuration information is embodied as a plurality of discrete information data packets.

44. (Original) The method of claim 32, wherein the first set of configuration information is embodied as a stream of information data bits.

45. (Currently amended) The method of claim 32, wherein the first and second pluralities of ~~fixed and differing~~ heterogeneous computational elements comprise a plurality of fixed circuit architectures, the plurality of fixed circuit architectures comprising circuitry adapted to perform at least two of the following corresponding functions: memory, addition, multiplication, complex multiplication, subtraction, configuration, reconfiguration, control, input, output, and field programmability.

46. (Previously presented) The method of claim 32, wherein the plurality of functional modes comprises at least two of the following functional modes: linear algorithmic operations, non-linear algorithmic operations, finite state machine operations, controller operations, memory operations, and bit-level manipulations.

47. (Original) The method of claim 32, wherein the first subset of configuration information and the second subset of configuration information are commingled with data to form a singular bit stream.

48. (Currently amended) The method of claim 32, further comprising:

directing and scheduling the configuration of the first plurality of ~~fixed and differing~~ heterogeneous computational elements for the first functional mode and the configuration of the second plurality of ~~fixed and differing~~ heterogeneous computational elements for the second functional mode.

49. (Currently amended) The method of claim 32, further comprising:

timing and scheduling the configurations of the first and second pluralities of ~~fixed and differing~~ heterogeneous computational elements with corresponding data.

50. (Original) The method of claim 32, further comprising:

selecting the first subset of configuration information and the second subset of configuration information from a singular bit stream containing data commingled with the first set of configuration information.

51. (Previously presented) The method of claim 32, wherein the method is operable within a mobile station having the plurality of operating modes.

52. (Previously presented) The method of claim 51, wherein the plurality of operating modes of the mobile station comprises at least two of the following modes: a mobile telecommunication

mode, a personal digital assistance mode, a multimedia reception mode, a mobile packet-based communication mode, and a paging mode.

53. (Previously presented) The method of claim 32, wherein the method is operable within a server having the plurality of operating modes.

54. (Previously presented) The method of claim 32, wherein the method is operable within an adjunct network entity having the plurality of operating modes.

55. (Currently amended) The method of claim 32, further comprising:

configuring the first plurality of ~~fixed and differing~~ heterogeneous computational elements to generate a request for a second set of configuration information, the second set of configuration information providing a second operating mode of the plurality of operating modes.

56. (Currently amended) The method of claim 55, further comprising:

determining configuration capacity prior to utilizing the second set of configuration information to configure the second plurality of ~~fixed and differing~~ heterogeneous computational elements for the second operating mode.

57. (Previously presented) The method of claim 56, wherein configuration capacity is determined in a plurality of predefined units of hardware.

58. (Cancelled)

59. (Original) The method of claim 32, further comprising:

authorizing the reception of the first set of configuration information.

60. (Original) The method of claim 32, further comprising:

requesting authorization to receive the first set of configuration information.

61. (Original) The method of claim 32, further comprising:

decrypting the first set of configuration information.

62. (Currently amended) The method of claim 32, further comprising:

operating the first plurality of ~~fixed and differing~~ heterogeneous computational elements in the first functional mode while configuring the second plurality of ~~fixed and differing~~ heterogeneous computational elements for the second functional mode.

63. (Currently amended) A method for adaptive configuration of an integrated circuit, the integrated circuit having an interconnection network and first and second pluralities of fixed and differing computational elements, a first level of the interconnection network having routing elements and a second level of the interconnection network having switching elements, the method comprising:

transmitting a first set of configuration information, the first set of configuration information comprising a first subset of configuration information and a second subset of configuration information;

wherein when the first set of configuration information is received:

using the routing elements, selectively routing data and the first subset of configuration information through the first level of the interconnection network to the first plurality of computational elements and selectively routing data and the second subset of configuration information through the first level of the interconnection network to the second plurality of computational elements to provide a selected operating mode of a plurality of operating modes; and

using the switching elements, configuring through the second level of the interconnection network the first plurality of fixed and differing computational elements for a first functional mode ~~of a plurality of functional modes~~ in response to the first subset of configuration information, and the second plurality of fixed and differing computational elements for a second, different functional mode ~~of the plurality of functional modes~~ in response to the second subset of configuration information.

64. (Previously presented) The method of claim 63, wherein the first set of configuration information, when received, provides a first operating mode of the plurality of operating modes.

65. (Previously presented) The method of claim 64, further comprising:

transmitting a second set of configuration information, the second set of configuration information, when received, providing a second operating mode of the plurality of operating modes.

66. (Previously presented) The method of claim 65, wherein the first set of configuration information corresponds to a first configuration capacity and the second set of configuration information corresponds to a second configuration capacity.

67. (Original) The method of claim 63, further comprising:

selecting the first set of configuration information from a plurality of sets of configuration information.

68. (Previously presented) The method of claim 63, further comprising:

accessing the first set of configuration information in the memory.

69. (Previously presented) The method of claim 63, further comprising:

accessing the first set of configuration information in a third plurality of computational elements configured for a memory functional mode.

70. (Original) The method of claim 63, further comprising:

accessing the first set of configuration information in a machine-readable medium.

71. (Currently amended) The method of claim 63, wherein the first set of configuration information is transmitted through a ~~wireline~~ wireless interface.

72. (Original) The method of claim 63, wherein the first set of configuration information is transmitted through a wireline interface.

73. (Original) The method of claim 63, wherein the first set of configuration information is embodied as a plurality of discrete information data packets.

74. (Original) The method of claim 63, wherein the first set of configuration information is embodied as a stream of information data bits.

75. (Previously presented) The method of claim 63, wherein the first and second pluralities of fixed and differing computational elements comprise a plurality of fixed architectures, the plurality of fixed architectures comprising circuitry adapted to perform at least two of the following corresponding functions: memory, addition, multiplication, complex multiplication, subtraction, configuration, reconfiguration, control, input, output, and field programmability.

76. (Currently amended) The method of claim 63, wherein the first functional mode and second function mode are functional modes of a plurality of functional modes that comprises at least two of the following functional modes: linear algorithmic operations, non-linear algorithmic operations, finite state machine operations, controller operations, memory operations, and bit-level manipulations.

77. (Original) The method of claim 63, wherein the transmission step further comprises commingling data with the first subset of configuration information and the second subset of configuration information to form a singular bit stream.

78. (Original) The method of claim 63, wherein the method is operable within a wireless transmitter.

79. (Original) The method of claim 63, wherein the method is operable within a server.

80. (Original) The method of claim 63, wherein the method is operable within an adjunct network entity.

81 (Cancelled).

82. (Original) The method of claim 63, wherein the method is operable within a local area network.

83. (Original) The method of claim 63, wherein the method is operable within a wide area network.

84. (Original) The method of claim 63, wherein the method is operable within a wireline transmitter.

85. (Previously presented) The method of claim 63, further comprising:

receiving a request for transmission of a second set of configuration information, the second set of configuration information providing a second operating mode of the plurality of operating modes.

86. (Original) The method of claim 63, further comprising:

authorizing the transmission of the first set of configuration information.

87. (Original) The method of claim 63, further comprising:

requesting an authorization to transmit the first set of configuration information.

88. (Original) The method of claim 63, further comprising:

encrypting the first set of configuration information.

Claims 89 – 114 (Canceled)

115. (Previously presented) The system of claim 1, wherein the second plurality of computational elements further comprises at least one computational element which is different than the computational elements comprising the first plurality of computational elements.

116. (Previously presented) The system of claim 1, wherein the interconnection network is further adapted to independently configure the first plurality of computational elements and the second plurality of computational elements.

117. (Cancelled)

118. (Previously presented) The system of claim 1, wherein the first level of the interconnection network is further adapted to configure the first plurality of computational elements and the second plurality of computational elements by selectively switching data to the first plurality of computational elements and the second plurality of computational elements.

119. (Previously presented) The system of claim 1, wherein the second plurality of computational elements further comprises at least one computational element which is different than the computational elements comprising the first plurality of computational elements, and wherein the first level of the interconnection network is further adapted to configure the first plurality of computational elements and the second plurality of computational elements by selectively switching data to the first plurality of computational elements and the second plurality of computational elements.

120. (Previously presented) The system of claim 1, wherein the interconnection network is further adapted to additionally configure both the first plurality of computational elements and the second plurality of computational elements for a third functional mode of the plurality of functional modes by selectively routing data to the first plurality of computational elements and the second plurality of computational elements.

121. (Previously presented) The system of claim 1, wherein the interconnection network is further adapted to additionally configure both the first plurality of computational elements and the second plurality of computational elements for a third functional mode of the plurality of functional modes by selectively switching data to the first plurality of computational elements and the second plurality of computational elements.

122. (Cancelled)

123. (Previously presented) The system of claim 1, wherein the plurality of routing elements are adapted for self-routing of data packets to the first and second pluralities of computational elements.

124. (Previously presented) The system of claim 1, wherein the plurality of routing elements are adapted for self-routing of the first subset of configuration information to the first plurality of computational elements and self-routing of the second subset of configuration information to the second plurality of computational elements.

125. (Previously presented) The system of claim 1, wherein the interconnection network further comprises a first data interface circuit coupled to the first plurality of computational elements and a second data interface circuit coupled to the second plurality of computational elements, wherein the first level of the interconnection network is further adapted to configure the first plurality of computational elements by selectively routing data through the first data interface circuit for transfer to the first plurality of computational elements, wherein the second level of the interconnection network is further adapted to selectively switch data input and output connections between the computational elements comprising the first plurality of computational elements, wherein the first level of the interconnection network is further adapted to configure the second plurality of computational elements by selectively routing data through the second data interface circuit for transfer to the second plurality of computational elements, and wherein the second level of the interconnection network is further adapted to selectively switch data input and output connections between the computational elements comprising the second plurality of computational elements.

126. (Previously presented) The system of claim 1, further comprising:

a first data interface circuit coupled to the first plurality of computational elements and to the interconnection network;

a second data interface circuit coupled to the second plurality of computational elements and to the interconnection network;

wherein the plurality of routing elements of the first level of the interconnection network are adapted to route data selectively to the first data interface circuit for transfer to the first plurality of computational elements and to the second data interface circuit for transfer to the second plurality of computational elements, wherein the plurality of switching elements of the second level of the interconnection network are adapted to configure the first plurality of computational elements by selectively switching data input and output connections between the computational elements comprising the first plurality of computational elements, and wherein the plurality of switching elements of the second level of the interconnection network are adapted to configure the second plurality of computational elements by selectively switching data input and output connections between the computational elements comprising the second plurality of computational elements.

127. (Previously presented) The system of claim 1, wherein the plurality of switching elements comprise a plurality of multiplexers.

128. (Previously presented) The system of claim 1, wherein the plurality of switching elements comprise a plurality of demultiplexers.

Claims 129–143 (Canceled)

Claim 144. (New) The system of claim 1, further comprising a memory coupled to the interconnection network and adapted to store the first set of configuration information.

Claim 145. (New) The system of claim 1, wherein the first plurality of fixed and differing computational elements, the second plurality of fixed and differing computational elements, and the interconnection network are located in an adaptive computing engine (ACE) integrated circuit.